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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/035,528

10/23/2001

Brian E. Lemoff

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11/03/2004

AGILENT TECHNOLOGIES, INC.

Legal Department, DL429

Intellectual Property Administration

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EXAMINER

LI, SHI K

ART UNIT

PAPER NUMBER

2633

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/035,528

Applicant(s)

LEMOFF ET AL.

Examiner

Shi K. Li

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 6-24 is/are rejected.
- 7) ☒ Claim(s) 2-5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 6, 9-10, 14-17, 19-21 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 6 recites the limitation "the pulses" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.
4. Claim 9 recites the limitation "the pulses" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.
5. Claim 10 recites the limitation "the Lithium Niobate switch" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.
6. Claims 14, 20-21 and 24 recite the limitation "the optical switch" in line 1 of claim 14. There is insufficient antecedent basis for this limitation in the claim.
7. Claims 16 and 17 recite the limitation "the pulses" in line 2 of claim 16. There is insufficient antecedent basis for this limitation in the claim.
8. Claim 19 recites the limitation "the pulses" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1, 8, 10, 13, 18 and 23 are rejected under 35 U.S.C. 102(e) as being anticipated by Cao (U.S. Patent 6,396,607 B1).

Regarding claims 1 and 13, Cao discloses in FIG. 1 an optical retimer for retiming optical data signals. FIG. 1 comprises a clock recovery circuit 50, an optical out-coupler (tap 44) for output retimed optical signals, and an EDFA amplifier 42 for compensating loss of the retimer. Cao teaches in col. 5, line 65-col. 4, line 35 that the coupler 70 switches signal between the two ports that are coupled to the isolator and the EDFA, respectively. That is, the coupler 70 acts as a switch for outputting current data bit under the control of the recovered clock pulse.

Regarding claims 8 and 23, Cao includes in FIG. 1 EDFA 42 for compensating loss of the retimer.

Regarding claims 10 and 18, Cao includes in FIG. 1 fiber coil 80.

11. Claims 1 and 10-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Heuring et al. (U.S. Patent 4,900,115).

Regarding claim 1, Heuring et al. discloses in FIG. 3 a circuit for synchronization and amplitude restoration of optical signal. FIG. 3 comprises an optical switch 10, an out-coupler 33, and amplifier A.

Regarding claim 10, Heuring et al. includes in FIG. 3 fiber 36.

Regarding claim 11, Heuring et al. teaches in col. 2, line 1 to use a lithium niobate switch.

12. Claims 1, 7, 13 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Sarathy et al. (U.S. Patent 6,636,318 B2).

Regarding claims 1 and 13, Sarathy et al. discloses in FIG. 1 a regenerator comprising an all-optical retiming circuit 131. Sarathy et al. discloses in FIG. 5 the details of the regenerator. As explained in col. 6, line 64-67, the SOA 571 and SOA 572 form a gate (switch) to pass the recovered clock signal gated by the reshaped input signal. FIG. 5 also includes out-coupler with output arm 552 and amplifier 570.

Regarding claims 7 and 22, amplifier 570 is a SOA.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cao (U.S. Patent 6,396,607 B1) in view of Al-hemyari (U.S. Patent 6,510,259 B1).

Cao has been discussed above in regard to claims 1, 8, 10, 13, 18 and 23. The difference between Cao and the claimed invention is that Cao does not teach to integrate the switch, out-coupler and amplifier in a Lithium Niobate substrate. Al-hemyari teaches in FIG. 1 and col. 1, lines 38-42 to integrate optical components as an integrated circuit. Al-hemyari teaches in col. 10, lines 40 to use Lithium Niobate substrate. Al-hemyari explains in col. 1, lines 38-42 that the

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invention is applicable to optical components such as coupler, amplifier as well as switch. One of ordinary skill in the art would have been motivated to combine the teaching of Al-hemyari with the optical retimer of Cao because integrating optical components in a common substrate reduces component size and increases reliability. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to integrate the coupler, amplifier and switch on a common Lithium Niobate substrate, as taught by Al-hemyari, in the optical retimer of Cao because integrating optical components in a common substrate reduces component size and increases reliability.

Allowable Subject Matter

15. Claims 2-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. Claims 6, 9, 14-17, 19-21 and 24 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

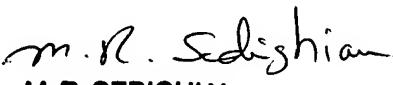
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shi K. Li whose telephone number is 571 272-3031. The examiner can normally be reached on Monday-Friday (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

skl


M. R. SEDIGHIAN
PRIMARY EXAMINER